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RAILROAD ACCIDENT INVESTIGATION

AUG 25 1965

Report No. 4031

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THE BALTIMORE AND OHIO RAILROAD COMPANY

LEBANON, ILL.

NOVEMBER 14, 1964

INTERSTATE COMMERCE COMMISSION

Washington

H. W. P.

released
SEP 13 1965

SUMMARY

DATE:

November 14, 1964

RAILROAD:

Baltimore and Ohio

LOCATION:

Lebanon, Ill.

KIND OF ACCIDENT:

Rear-end collision

TRAINS INVOLVED:

Freight

Freight

TRAIN NUMBERS:

93

Extra C&O 7060 West

LOCOMOTIVE NUMBERS:

Diesel-electric units
4486, 5454, 5426

C&O diesel-electric unit
7060

CONSISTS:

60 cars, caboose

B&O diesel-electric unit
6615 in tow, 11 cars, caboose

ESTIMATED SPEEDS:

Standing

25 m. p. h.

OPERATION:

Timetable, train orders, automatic
block-signal system

TRACK:

Single; tangent; level

WEATHER:

Clear

TIME:

9:00 a.m.

CASUALTIES:

3 injured

CAUSE:

Failure of engineer to operate following train in accordance with
signal indications.

SEP 18 1965
H. W. P.

INTERSTATE COMMERCE COMMISSION
RAILROAD SAFETY AND SERVICE BOARD

RAILROAD ACCIDENT INVESTIGATION

REPORT NO. 4031

THE BALTIMORE AND OHIO RAILROAD COMPANY

NOVEMBER 14, 1964

SYNOPSIS

A rear-end collision occurred between two freight trains on the Baltimore and Ohio Railroad near Lebanon, Ill., on November 14, 1964. Three crew members of the following train were injured.

The accident was caused by failure of the engineer to operate the following train in accordance with signal indications.

Location and Method of Operation

The accident occurred on that part of the St. Louis Division extending between Shops, Ind., and St. Louis, Mo., a distance of 168.6 miles. In the accident area this is a single-track line over which trains operate by timetable, train orders and an automatic block-signal system. At Lebanon, Ill., 144.1 miles west of Shops, a siding 4,091 feet long parallels the main track on the south. The west siding-switch is 1,764 feet west of the station.

The collision occurred on the main track 1,402 feet west of the west siding-switch at Lebanon.

Automatic signals 3117, 3139 and 3147, governing westbound movements on the main track, are 3.4 miles, 1.0 mile and 1,602 feet east of the collision point, respectively.

Details concerning the track, signals, operating rules, trains, and other factors involved in the accident are provided in the appendix.

Description and Discussion

No. 93, a westbound second-class freight train, consisting of 3 diesel-electric units, 60 cars and a caboose, left Shops at 5:16 a.m., 3 hours 21 minutes late, and passed Shattuc, Ill., 33.3 miles east of Lebanon, at 7:57 a.m., 3 hours 48 minutes late. Approximately 15 minutes later, it passed Extra C&O 7060 West, a westbound local freight train standing on the siding at Carlyle, 23.8 miles east of Lebanon. Soon after No. 93 passed signal 3117 at Summerfield, 2.9 miles east of Lebanon, the conductor and flagman saw smoke rising from under the 41st car because of a sticking brake. The conductor promptly operated the caboose valve, applying the train brakes at a service rate. The train passed signal 3139 and, about 8:40 a.m., stopped at Lebanon in the block of signal 3139 with the front end on a 1°00' curve to the left and with the caboose a short distance west of the east siding-switch. Because of track curvature and trees on the south side of the railroad, the view between the locomotive and caboose was obstructed.

When No. 93 stopped at Lebanon, the flagman proceeded to the rear to provide protection against following trains and the conductor walked forward to the 41st car. The front brakeman alighted from the locomotive and proceeded rearward on the curve to determine why the brakes had applied and to look for a signal from the conductor or flagman. A few seconds later, while walking on the curve, the front brakeman heard the train brakes release. He signalled the engineer to sound the prescribed whistle signal to recall the flagman. He then returned to the locomotive without having seen a signal from either the conductor or flagman, and told the engineer to proceed slowly westward on the curve. The engineer sounded the prescribed whistle signal for the flagman to return to the train and, after a short while, the train started forward.

Soon after the train started forward, the flagman looked ahead, saw the conductor giving stop signals, and stopped the train by operating the caboose valve. The conductor boarded the caboose shortly thereafter and informed the flagman that he had not yet released the brake on the 41st car. He then returned to this car and the flagman proceeded a short distance to the rear of the caboose to provide protection against following trains.

Meanwhile, the front brakeman walked rearward from the locomotive. The conductor cut out the air brake of the 41st car about the time the front brakeman reached the middle of the train and gave the front brakeman a signal for the train to proceed. The flagman saw the conductor's signal and hurriedly returned to the caboose as the front brakeman relayed the proceed signal to the engineer. The train started forward a few minutes later and the conductor boarded the caboose. The front brakeman boarded one of the cars near the middle of the train to be in an advantageous position if it was the conductor's intention to place the disabled car on the west end of the Lebanon siding. The train moved through the 1°00' curve. As it passed signal 3147 and the west siding-switch, the conductor saw the front brakeman had not returned to the locomotive, but was riding one of the cars. He immediately applied the train brakes by operating the caboose valve and the train stopped in the block of signal 3147 with the rear end 1,402 feet west of the Lebanon west siding-switch. The conductor started walking forward to instruct the front brakeman to ride the locomotive and the flagman

again proceeded to the rear to provide protection against following trains.

As he walked eastward, the flagman heard the locomotive horn of an approaching westbound train and lighted a fusee. He stated that he was about 500 feet to the rear of his caboose when the headlight of the approaching train, Extra C&O 7060 West came into view along the 1°00' curve at Lebanon. He also stated that he gave stop signals with a lighted fusee and heard the locomotive horn of Extra C&O 7060 West sound an acknowledgment. Realizing the approaching train could not stop short of a collision, the flagman ran off the track structure to safety. The collision occurred immediately afterward, injuring the engineer, front brakeman and flagman of Extra C&O 7060 West.

Extra C&O 7060 West originated at Flora, Ill., 72.1 miles west of Shops. It left Flora at 6:15 a.m. on the day of the accident and performed switching at several points westward, including Carlyle, where it entered the siding and cleared the main track for No. 93. It left Carlyle immediately after No. 93 passed and stopped at Trenton, 6.7 miles east of Lebanon, for further switching operations. This train, consisting of a C&O diesel-electric unit, a B&O unit in tow, 11 cars and a caboose, left Trenton at 8:50 a.m. A few minutes later, it approached signal 3117 at Summerfield at 45 to 50 miles per hour, according to estimates of crew members.

Although results of tests made after the accident indicate they were mistaken about the aspect displayed by signal 3117, the engineer and front brakeman said this signal was displaying a Clear aspect as the locomotive approached and passed it. According to their statements, the train continued westward without reducing speed and while approaching signal 3139 at 500 to 1,000 feet they saw this signal was displaying an Approach aspect. The engineer said he initiated a 6 or 7-pound service brake application and increased this to a 10-pound reduction of brake pipe pressure soon afterward. These brake-pipe reductions did not materially reduce the speed, and the train passed signal 3139 and proceeded westward considerably in excess of Medium speed, the maximum permissible under the aspect displayed by signal 3139. According to their statements, the engineer and front brakeman saw signal 3147 was displaying a Stop-and-Proceed aspect when the train was moving in the Lebanon station area, approximately 1,550 feet east of signal 3147, and the engineer applied the brakes in emergency. The train passed signal 3147 and, about this time, the engineer and front brakeman saw the flagman of No. 93 giving stop signals. The train passed the flagman immediately afterward. A few moments later, when the speed had been reduced to about 25 miles per hour, it struck the rear end of No. 93.

Tests and observations made after the accident disclosed the signals involved, and the brakes of Extra C&O 7060 West, functioned properly.

Findings

As the following train, Extra C&O 7060 West, approached Lebanon, signals 3117, 3139 and 3147 evidently displayed Approach-medium, Approach, and Stop-and-Proceed aspects, respectively. Under these circumstances, the train was authorized to proceed at Medium speed, not exceeding 30 miles per hour, in the blocks of signals 3117 and 3139, and was required to stop short of signal 3147.

After stopping at signal 3147, it was authorized to proceed in the block of that signal at Restricted speed, prepared to stop short of another train or obstruction. The investigation revealed Extra C&O 7060 West moved in the blocks of signals 3117 and 3139 considerably in excess of the maximum speed authorized under the aspects displayed by those signals and collided with No. 93 after failing to stop short of signal 3147 as required.

Cause

This accident was caused by failure of the engineer to operate the following train in accordance with signal indications.

Dated at Washington, D. C., this 30th
day of July, 1965.

By the Commission, Railroad Safety and Service Board.

(SEAL)

H. NEIL GARSON,
Secretary.

APPENDIX

Track

From the east on the main track there are, successively, a long tangent, a 1°00' curve to the left 1,002 feet, and a tangent 1,434 feet to the accident point and a considerable distance westward. The grade is practically level in the accident area.

Signals

Signals 3117, 3139 and 3147 are of the color-position light type and are approach lighted. The aspects applicable to this investigation and the corresponding indications and names are as follows:

Signal	Aspect	Indication	Name
3117	White marker diagonally to left over two green lights in vertical position	Proceed, approaching next signal at medium speed. * * *	Approach-medium
	White marker directly over two green lights in vertical position	Proceed	Clear
3139	White marker over two yellow lights in diagonal position to the right	Proceed, prepared to stop at next signal. Train exceeding medium speed when indication is seen must take action at once to reduce to medium speed * * *	Approach
3147	White marker over two red lights in horizontal position	Stop; then proceed at restricted speed until entire train passes next signal	Stop and Proceed

The circuits are so arranged that when a westbound train approaches signal 3117, and the block of signals 3117 and 3139 are unoccupied and the block of signal 3147 is occupied, signals 3117, 3139 and 3147 display Approach-medium, Approach and Stop-and-Proceed aspects, respectively.

Operating Rules

DEFINITIONS

SPEEDS

Medium Speed - A speed not exceeding thirty (30) miles per hour.

Restricted Speed - Proceed, prepared to stop short of; Train, * * *

SIGNALS

11(A). The following signals must be used by flagmen:

Day Signals

A red flag,
Torpedoes and fusees, as provided by Rule 99.

99. * * * PROTECTION OF TRAINS

When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes on the rail, and when necessary, displaying lighted fusee in addition.

* * *

Where Rules 505 to 519, inclusive, are in effect, fusees and torpedoes will not be used by trainmen, except in emergency * * *

(Rules 505 to 519, inclusive, referred to above are AUTOMATIC BLOCK SYSTEM RULES, and were in effect in the territory involved at the time the accident occurred.)

Trains

No. 93 consisted of diesel-electric units 4486, 5454 and 5426, coupled in multiple-unit control, 60 cars and a caboose. The train brakes had been tested and had functioned properly when used en route.

Extra C&O 7060 West consisted of C&O car-body type diesel-electric unit 7060, B&O road-switcher type unit 6615 in tow, 11 cars and a caboose. The train brakes had been tested and had functioned properly when used en route. The headlight was lighted. Although the train was hauled by a locomotive of the Chesapeake and Ohio Railway Company, it was operated by the B&O Railroad and was manned by B&O employees.

As Extra C&O 7060 West approached the accident point, the engineer and front brakeman were in the control compartment at the front of the first diesel-electric unit. The conductor and flagman were in the caboose.

Damages

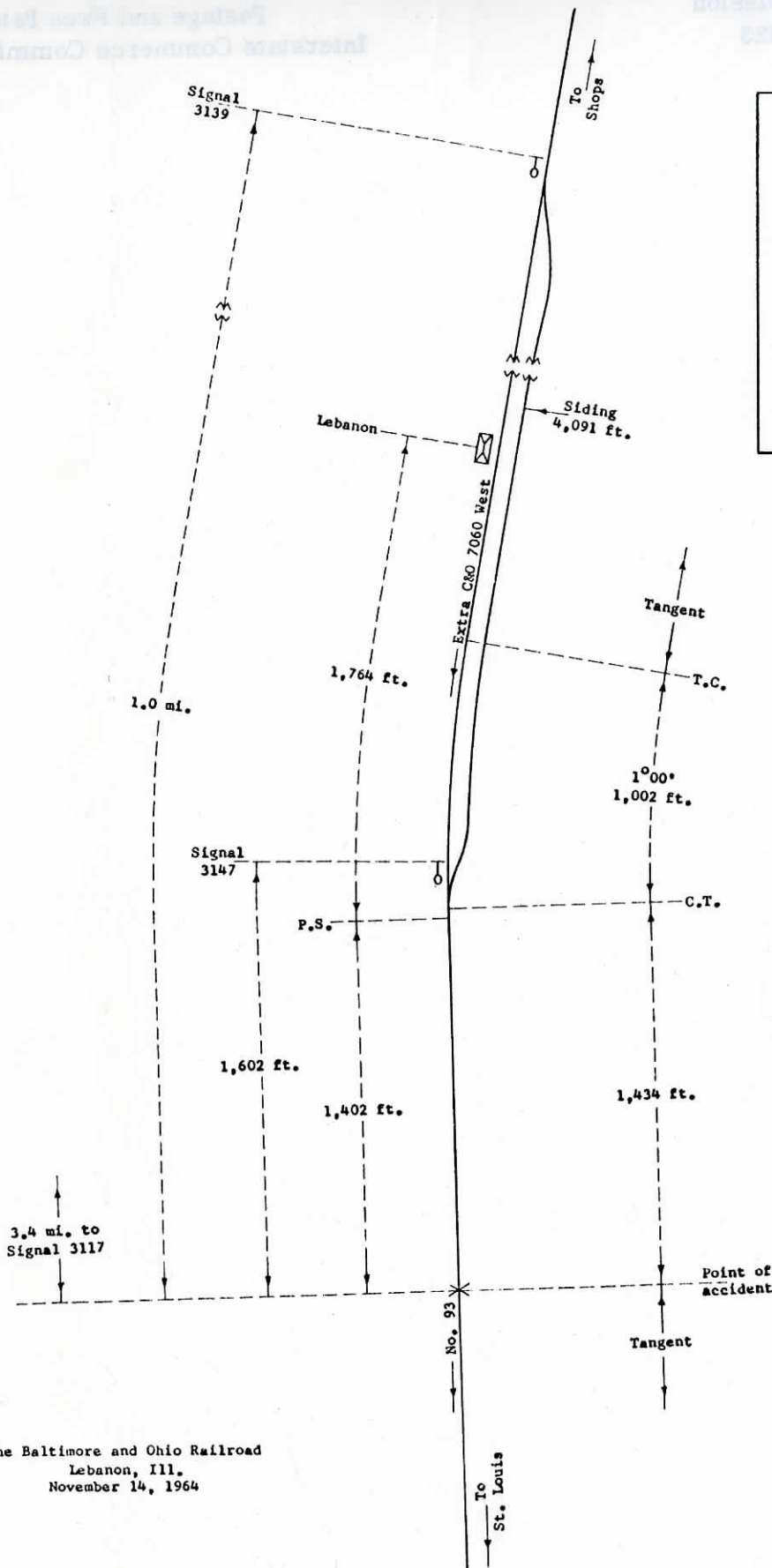
The caboose and the 59th and 60th cars of No. 93 were derailed. The 60th car and the caboose were destroyed. The 59th car was not damaged.

Extra C&O 7060 West stopped with the front end 90 feet west of the accident point. The first diesel-electric unit and the unit in tow were derailed. They were heavily damaged.

Other Factors

The accident occurred at 9:00 a.m., in clear weather.

The maximum authorized speed for extra freight trains in the vicinity of Lebanon is 50 miles per hour.



- Shops, Ind. 72.1 mi.
- Flora, Ill. 38.7 mi.
- Shattuc 9.5 mi.
- Carlyle 17.1 mi.
- Trenton 3.8 mi.
- Summerfield 2.9 mi.
- Lebanon, Ill. 0.6 mi.
- X Point of accident 23.9 mi.
- St. Louis, Mo.

The Baltimore and Ohio Railroad
Lebanon, Ill.
November 14, 1964

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Washington, D. C. 20423

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